

What is claimed is:

1. In an access data network, comprising:
  - a communication access node coupled to a wide area internetwork;
  - a plurality of digital subscriber line transceivers coupled to network ends of subscriber lines, for data communication with transceivers coupled to respective customer premises ends of respective subscriber lines;
  - an access switch coupled for data communications with the digital subscriber line transceivers, for receiving data from customer premises equipment via respective ones of the digital subscriber line transceivers and for supplying data intended for transmission to predetermined customer premises equipment to the respective ones of the digital subscriber line transceivers;
  - a high-speed data link between the access switch and the communication access node;
  - a local services network coupled locally to the access switch, wherein the access switch segregates upstream traffic from the respective customer premises equipment between the local services network and the high-speed data link to the communication access node, and the access switch aggregates downstream traffic from the local services network and the high-speed data link from the communication access node for transmission to the respective customer premises equipment,
  - a method of assessing and reporting operations of the access data network with regard to a service provided to the customer premises equipment of an identified one customer through the access data network, the method comprising the steps of:
    - conducting an interactive session between a user terminal and a server coupled to the local services network, to initiate assessment;
    - in response to the interactive session, automatically determining at least one state of the access data network in relation to provision of the service to customer premises equipment of the identified one customer through the access data network; and
    - communicating information regarding the at least one state of the access data network to the user terminal, for presentation to the user.

2. A method as in claim 1, wherein:

the one customer has a logical circuit provisioned through the access data network, the logical circuit extending from the customer premises equipment of the one customer to the communication access node via the access switch and the high-speed data link, and

5        the logical circuit comprises a layer-2 protocol logical communication circuit provisioned through the access switch and the high-speed data link.

3.        A method as in claim 2, wherein the layer-2 protocol logical communication circuit comprises an Asynchronous Transfer Mode (ATM) virtual circuit.

4.        A method as in claim 1, further comprising:

continuing the interactive session between the user terminal and the server, to initiate a further assessment;

5        in response to initiation of the further assessment, automatically determining at least one other state of the access data network in relation to provision of the service to customer premises equipment of the identified one customer through the access data network; and  
communicating information regarding the at least one other state of the access data network to the user terminal, for presentation to the user.

5.        A method as in claim 1, wherein the user terminal comprises customer premises equipment of the identified one customer, and the interactive session is conducted via the access data network between the server and the customer premises.

6.        A method as in claim 1, wherein the user terminal comprises a workstation for technical personnel concerned with operations of the access data network.

7.        A method as in claim 1, wherein the step of automatically determining at least one state of the access data network comprises conducting a throughput test between a server coupled to the local services network and customer premises equipment of the one identified customer.

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8. A method as in claim 1, wherein the step of automatically determining at least one state of the access data network comprises conducting a throughput test between another server and customer premises equipment of the one identified customer, wherein the other server is coupled to either the communication access node, a point of presence of a wide area service provider or the wide area internetwork.

9. A method as in claim 1, wherein the step of automatically determining at least one state of the access data network comprises obtaining data relating to current performance of at least one element of the access data network.

10. A system for providing automated quality assurance capabilities in an access data network that offers access services to a wide area domain and a logically separate local services domain, said system for providing automated quality assurance capabilities comprising:

5 a web server, coupled to the local services domain, for interactive communication with a customer subscribing to wide area domain access service, through the access data network; and

means responsive to customer selections via the interactive communication with the web server, for automatically isolating selected points of the access data network and determining a current status of at least one element associated with each selected point effecting the wide area domain access service provided to the customer, and for providing results of each status determination to the web server.

10 11. A communication system as in claim 10, wherein, the web server provides a report of each determined current status through the access data network to the customer.

12. A communication system as in claim 11, wherein the means for determining comprises a server for conducting a throughput test regarding the wide area domain access service for the customer and providing test results to the web server.

13. A communication system as in claim 10, wherein the means for determining comprises a user device in communication with a server through the access data network for performing a throughput test, and for calculating and presenting at least one communication rate as a result of the throughput test.

14. A communication system as in claim 10, wherein the means for determining comprises a server coupled to the local services domain for performing a test regarding the access service for the customer and providing test results to the web server.

15. A communication system as in claim 10, wherein the means for determining comprise an application for obtaining status information from at least one element of the access data network regarding the wide area domain access service for the customer and providing the status information to the web server.

16. A system, comprising:

an access data network, for providing access services to a wide area domain and a logically separate local services domain, the access data network separating the two domains at least in part based on distinctions in types of protocols at a level above a protocol level used to define basic connectivity through the access data network to the wide area domain;

5 a web server, coupled to the local services domain, for interactive communication with a customer subscribing to wide area domain access service, through the access data network; and

means responsive to customer selections via the interactive communication with the 10 web server, for automatically isolating selected points of the access data network and determining a current status of at least one element associated with each selected point effecting the wide area domain access service provided to the customer, and for providing results of each status determination to the web server.

17. A system as in claim 16, wherein the access data network comprises:

a communication access node coupled to a wide area internetwork that forms the wide area domain;

5        a plurality of digital subscriber line transceivers coupled to network ends of subscriber lines, for data communication with transceivers coupled to respective customer premises ends of respective subscriber lines;

10      an access switch coupled for data communications with the digital subscriber line transceivers, for receiving data from customer premises equipment via respective ones of the digital subscriber line transceivers and for supplying data intended for transmission to 10 predetermined customer premises equipment to the respective ones of the digital subscriber line transceivers;

          a high-speed data link between the access switch and the communication access node;

          a local services network forming the local services domain, coupled locally to the access switch,

15      wherein the access switch segregates upstream traffic from the respective customer premises equipment between the local services network and the high-speed data link to the communication access node, and the access switch aggregates downstream traffic from the local services network and the high-speed data link from the communication access node for transmission to the respective customer premises equipment.

18.     A software product enabling automated quality of service assessment in an access data communication network, the software product comprising:

          at least one machine readable medium;

5        programming code, carried by the at least one machine readable medium, for execution by at least one computer, wherein the programming code comprises:

          a web server application for implementing interactive communication with a user to identify a customer subscribing to services of the access data communication network desiring service assessment and selecting network points for assessment; and

10      a test application for: automatically isolating selected network points, determining a current status of the selected points of the access data communication network effecting an access service provided to the customer, and providing results of the status determinations to the web server application.

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19. A software product as in claim 18, wherein the web server application provides an interactive user interface for the customer through the access data communication network.

20. A software product as in claim 18, wherein the web server application provides an interactive user interface for personnel concerned with operations of the access data communication network.

21. A software product as in claim 18, wherein the test application selectively obtains status information from at least one element of the access data communication network and selectively activates at least one throughput test through the access data communication network to equipment of the customer.

22. A method for automated service assessment in an access data communication network, comprising the steps of:

interacting with a user through the access data communication network to identify a customer subscribing to wide area access service, requiring service assessment;

5 from a local service domain, selectively isolating and determining current capabilities of test points in the access data communication network to provide service for the customer; and

automatically reporting the determined current capabilities of the test points through the access data communication to the user.

23. A method as in claim 22, wherein the user is the customer.

24. A method as in claim 22, wherein the determined current capabilities relate to an access service for the customer to a wide area domain.

25. In an access data network, comprising:

a communication access node coupled to a wide area internetwork;

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a plurality of digital subscriber line transceivers coupled to network ends of subscriber lines, for data communication with transceivers coupled to respective customer premises ends  
5 of respective subscriber lines;

an access switch coupled for data communications with the digital subscriber line transceivers, for receiving data from customer premises equipment via respective ones of the digital subscriber line transceivers and for supplying data intended for transmission to predetermined customer premises equipment to the respective ones of the digital subscriber line  
10 transceivers;

a high-speed data link between the access switch and the communication access node;

a local services network coupled locally to the access switch, wherein the access switch segregates upstream traffic from the respective customer premises equipment between the local services network and the high-speed data link to the communication access node, and the  
15 access switch aggregates downstream traffic from the local services network and the high-speed data link from the communication access node for transmission to the respective customer premises equipment,

· / a method of assessing operations of the access data network, the method comprising the steps of:

20 conducting a communications test between a user terminal of one customer and a first server coupled for communication via the communication access node, to assess a layer 2 connectivity for the one customer through the access data network; and

conducting a communications test between a second server coupled to the local services network and the first server, to assess a layer 2 connectivity from the access switch to the  
25 communication access node.

26. A method as in claim 25, wherein at least one of the communications tests comprises a throughput test communication.

27. A method as in claim 25, wherein:

the one customer has a logical circuit provisioned through the access data network, the logical circuit extending from the customer premises equipment of the one customer to the communication access node via the access switch and the high-speed data link, and

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the logical circuit comprises a layer-2 protocol logical communication circuit provisioned through the access switch and the high-speed data link.

28. A method as in claim 26, wherein the layer-2 protocol logical communication circuit comprises an Asynchronous Transfer Mode (ATM) virtual circuit.